

ARCHITECTURAL PRODUCTS

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Form
Inspired Product + Material Choices

THE COORSTEK CENTER FOR
APPLIED SCIENCE AND ENGINEERING

A NEW CAMPUS STANDARD



a connection to the green

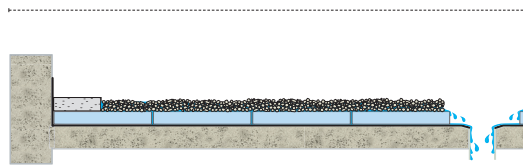
Bohlin Cywinski Jackson's design employs massing and materiality to connect to the site's historical context as well as the omnipresent Front Range landscape. The glass façade not only reflects its environment on the exterior, but provides a floor-to-ceiling connection with outdoors throughout the interior.

BLUE ROOFS

No Chicago H₂O Blues

With a mandate to account for total building mass and footprint, and that held stormwater be released within 48 hours, the client required something special: a “blue” roof.

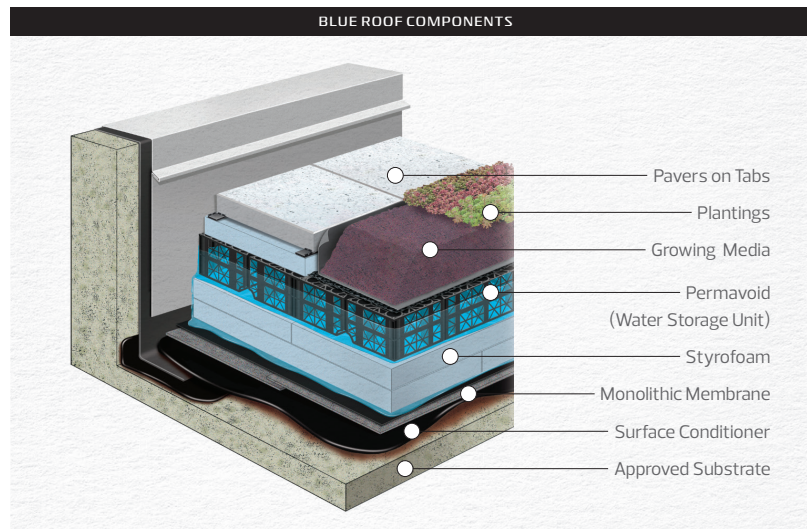
Very near Lake Michigan in Chicago, Northwestern Medical Center faced several challenges in bringing a new campus building to life. Designed by Perkins+Will, the project involves a phased construction where a 14-story base building is presently under construction; a 20-story tower addition is planned for construction in five to 10 years. Since the project is built-out to all property lines there are no at-grade landscape areas, which presented a particular challenge given the city’s Dept. of Stormwater Management permit requirement that the project account the total building mass and footprint. Translation: 10,000 cubic ft. of stormwater detention was required. Further, city code required that this volume be released through the flow control drains within 48 hours. This challenge was met with the implementation of a pair of “blue roofs.” A creation of American Hydrotech, the detention system is a composite of materials and products that can hold, and slowly release, large volumes of stormwater. According to Hydrotech’s Richard Hayden, the blue roof lies below layers of pavers and vegetation, with drains that utilize an insert with an orifice to regulate the flow of water out of the drain.



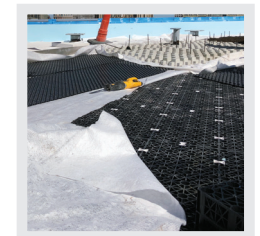
Roofs with insulation and ballast displace water, meaning better drainage; the more boards and ballast, the more displaced. A flat deck will drain with enough water, due to gravity.

BLUE ROOFING

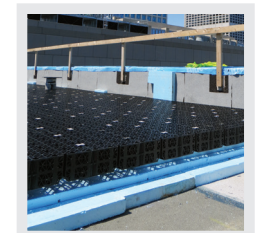
Water volume created by the orifice in the flow control drains requires a place to go underneath the pavers and garden roof. “Blue” roofs are created using Hydrotech’s Permavoid product, a structural plastic voiding component. The company has adapted this product for inclusion in their blue-roof assemblies. This 14-in. x 28-in. x 6-in. deep module has the ability to store nearly 0.5-cubic ft. of water per square ft. of roof area on a flat deck. It also serves as a base for the assemblies on top. To optimize the blue roof storage, the roofs on this building, explains Hayden, were constructed with flat, zero-slope decks.



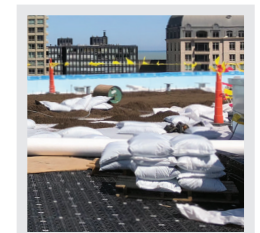
“The standpipe determines the maximum depth of the water accumulated in the blue roof; it also acts as a safety feature by allowing excess water to flow unrestricted into the drain when the blue roof is full.”



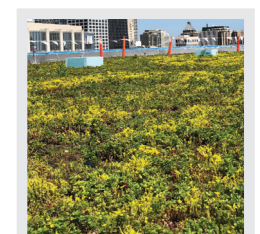
Permavoid



Permavoid and styrofoam



Soil



Plantings

CHICAGO INFILL NEEDS BUILDINGS THAT CAN HOLD AND DIVERT WATER

The Permavoid layer was covered in Hydrotech’s Hydrodrain drainage composite; three rows of 3-in. pavers were installed at the parapet to offset the buoyancy of the 7 in. of insulation below. Three rows of checker block units were installed in the leading edge of the garden roof assembly to reinforce the garden roof from the effects of wind.

STRONG FOUNDATION

Permavoid units arrive in pre-assembled panels consisting of nine units, and are quickly laid out on the roof deck. The units create a strong foundation for subsequent layers and are easy to cut to fit around the features such as skylights.

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Circle 391